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ABSTRACT

This paper presents a conceptual model for determining patterns of predecisional behavior of school administrators, and a method for empirical verification of the model through content analysis of subjects' responses to complex problem-solving situations. The discussion concerns the concept of the relationship among identifiable patterns of predecisional behavior, environmental consequences of value or profit, and organismic and situational variables that possibly modify predecisional behavior. Research study findings, utilizing the model and procedures, draw some preliminary inferences with regard to the interface between strategy in the decision-making process and environmental consequences. (Author)

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UTILIZATION OF A SELECTION CRITERIA FOR SCREENING APPLICANTS FOR ADMINISTRATIVE TRAINING FOR THE PREDICTION OF PATTERNS OF PREDECISIONAL BEHAVIOR AT THE END OF THE TRAINING PERIOD

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The largest concerns in education today are centered on teacher militancy, community control, and student activism. These issues are of concern because they are directly reflected in the behavior of youth in our modern society and strike at the very purpose of education. The fact appears rather evident that the forces which are causing disruptions in education today are going to continue on a greater scale than the present. Such a state of affairs will make it most difficult for the schools to assist the youth of society in developing behaviors and attitudes necessary to cope with the active forces surrounding them. If schools are to cope with these forces and make a positive impact on youth, highly competent administrators are essential to deal with complex interwoven problems which have resulted from these forces. These problems will need imaginative solutions for even minimal maintenance of the balance of power.

The present as a prelude to the future indicates that educational leaders have to be able to cope with a variety of active forces which attack the system where it is most vulnerable. They must be prepared to initiate and develop significant progress in conjunction with maintaining stability in the face of strong countervailing forces.

These forces make administering educational institutions, particularly in urban centers, not only a herculean task, but also cause situations suggestive of the need for an administrator to be a protean artist. On the one hand he must understand, appreciate and utilize intellectual views; on the other, incorporate expert considerations; and still on another, be politically sensitive to the consequences of decisions. All seem essential if he is to relate effectively to the decision process and to the awaiting public. In short, he must be a philosopher, a technical expert, and a politician. At least one contemporary thinker has suggested that he should possibly be a philosopher-king who is somehow held accountable to the public for his actions.

In the present state of continuous disruption, the administrator potentially possesses the key to stability in his ability to establish decision-making processes which will maintain the organization in a reasonable state of equilibrium and at the same time exert some indication of forward movement. Establishment of such a process is so vital to the life of the organization that one cannot help but conclude that decision-making is not only a risk-laden but also a costly process. Much of the cost in decision-making arises from the collection and analysis of large amounts of data. Data usage in the processes is essential if one hopes for a decision that is to have a probability better than random chance. This suggests that information is important in the decision-making process; however, the value of information is directly proportional to the capacity of the administrator for aiding the decision-making process. In essence, the ability to recognize, retain, and assemble bits of information into some functional pattern which will aid in maximizing the expected value of a decision is an essential quality for an administrator to possess. The

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fact that intellectual, expert, and political considerations place constraints on information acquisition and on the total decision process prompts one to question if our criteria used in the selection of school administrators provides information which is a reliable predictor of job performance as it relates to decision-making processes and information acquisition. Further, does it reflect measurement of the qualities which are presently being demanded of educational administrators? Or, is the selection criteria still much as it has been in the past, *viz.*, oriented toward providing information on academic differences on those who self-select themselves from among the teaching ranks?

The literature in education in relation to providing information on personal characteristics of administrators is legion. Exemplary of these efforts is probably the work which was carried on at Stanford University for more than a decade as part of the Cooperative Program in Educational Administration. Stanford participated with a number of school districts in an effort to replace self-selection with a more defensible method of identifying future administrators. The researchers used eight tests - the *Miller Analogies Test*, the Allport-Vernon-Lindsey *Study of Values*, the *Minnesota Teacher Attitude Inventory*, the *Public Opinion Questionnaire*, and the *Edwards Personal Preference Schedule*, the *Strong Vocational Interest Inventory*, the *Group Rorschach*, and the *Analysis of Classroom Situations* (Moore, 1962). The personal qualities purportedly measured by these eight tests appear to be those reported long ago but still most commonly mentioned as prerequisites for successful school administration. Tyler (1946) listed "intelligence, social motivation, and general education" as the primary criteria for selection of administrators. Campbell, Corbally and Ramseyer (1958) emphasized the importance of high intelligence, originality, adaptability, ambition, persistence, confidence, and a degree of self-assurance. Briner (1958) suggested that subordinate administrators at least should possess above average intelligence, moral and spiritual values of middle-class society, ability to defend educational needs and current methodology, and an openmindedness which would encourage others to discuss problems freely.

The shortcomings of the studies in this area have not been so much in the independent variables used but in the dependent variable utilized to determine applicants to be selected. Most studies have used as the dependent variable practicing as opposed to not practicing administrators or judged as a "good administrator" by his peers, teachers, superintendent, or board of directors. However, such procedures ignore the central process of administration--decision-making. How do administrators function in conditions of uncertainty and stress? What items in a selection criteria will allow the university gate keeper to predict with some degree of accuracy an individual's decision-making behavior especially in demanding, complex, interwoven situations, before selection into administrative training?

With these notions and uncertainties in mind, a study was conducted to examine the relationship and predictive qualities of the selection criteria, presently utilized at the University of Washington to admit applicants in educational administration to their patterns of predecisional behavior in simulated complex problem-solving situations.

In this research study it was hypothesized that five items in the selection criteria for school administration trainees are related to and can be built into a prediction equation which will account for a significant amount of the variation in a quantitative measure of patterns of decision-making behavior.

The five independent variables used in the study were undergraduate grade point average, graduate grade point average, *Miller Analogies Test*, *Doppelt Mathematical Reasoning Test*, and University professors' ratings of the applicants based on interview information.*

Twenty-four graduate students in the College of Education, Area of Educational Administration, who were near the end of their training but currently participating in the administrative training program for public school administrators, served as subjects for the study.

In order to determine the subjects' patterns of decision-making behavior, they were administered printed case materials of six complex problem-solving situations. After each subject had responded to the materials, his written responses were content analyzed by two independent data analysts and scored against a predetermined scoring rationale. All other data on the subjects were already available from their advisors' files.

The statistical technique which was used to explore the relationship among the independent and the dependent variables was a stepwise multiple correlation and regression analysis. The multiple correlation coefficient (R) indicates the strength of relationship between one variable and two or more others. The multiple regression equation allows the prediction of an unknown variable from a battery of known variables (Guilford, 1965).

The strength of the relationships between patterns of decision-making behavior and the selection variables (undergraduate GPA, graduate GPA, the *Miller Analogies Test*, *Doppelt Mathematical Reasoning Test*, and University professors' ratings) was determined through calculation of the multiple R, using UCLA's BMD02R, Stepwise Regression Program. This program computes a series of multiple linear regression equations in a stepwise manner. At each successive step, one variable is added to the regression equation. The variable added is the one which provides for the greatest reduction in the error variance. Also it is the variable which has the highest correlation with the dependent variable when partialed on the variables which have already been added; and the variable which when added would have the highest F value (Dixon, 1968).

The resulting matrix of intercorrelations, the multiple correlations, and regression equation coefficients are presented in Table I.

The correlation coefficients between each independent variable and the dependent variable and subsequent probability statements were as follows: Undergraduate GPA, $r=.081$ ($p<.75$); Graduate GPA, $r=.656$ ($p<.001$); Miller, $r=.393$ ($p<.05$); Doppelt, $r=.271$ ($p<.20$); and professors' ratings, $r=.532$ ($p<.01$). The multiple R ($R_{0.23145}$) calculated to determine the strength of the relationship among the dependent variable and the five independent variables was 0.770, ($p<.001$).

The beta weights which served as the coefficients in the regression equation are also presented in Table I. These weights when used as coefficients produce the following regression equation:

$$\hat{Y} = -33.848\ X_1 + 116.340\ X_2 + 1.244\ X_3 + 0.806\ X_4 + 4.860\ X_5 + (-246.502)$$

Where: $\hat{Y}$ = Predicted score on pattern of predecisional behavior at the end of training.

X_1 = Undergraduate GPA
X_2 = Graduate GPA
X_3 = Miller Analogies Test
X_4 = Doppelt Mathematical Reasoning Test
X_5 = Professors' ratings
a = Constant to be added (-246.502)

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*A sixth variable, recommendations from field supervisors, was not available on all subjects; therefore, it was eliminated from the study.

The coefficient of multiple determination (R^2) which serves as an indicator of the amount of variance in the dependent variable which is dependent upon, associated with, or predicted by the independent variables in conjunction with the regression weights was found to be 0.5934. Therefore, 59.34 percent of the variance in the patterns of predecision-making behavior may be accounted for by the five items presently utilized in the educational administration area for the purpose of selecting applicants to receive administrative training. The remainigg 40.66 percent represents the coefficient of multiple non-determination (K^2) and is not accounted for in these variables.

From this information one may draw some rather preliminary conclusions which, however, should stand the test of repeated study of other samples of trainees before any strong conclusions are made in regard to the criteria used for selection. Accounting for 59 percent of the variation in a future behavioral pattern of school administrators in simulated complex problem-solving situations from the selection criteria has a probability of significance beyond the .01 level. Such a result deserves further study. Such findings also tend to indicate that other variables not accounted for should be investigated which may allow for further control of the 41 percent unaccounted for variation in the dependent variable. Such efforts would add to the precision and confidence in the prediction equation.

Some observations about the results appear to be essential at this point. Since frequently in the selection interview the professor has at his disposal the application folder of the prospective trainee, information in this file (i.e., grade point averages, and frequently information on the *Miller Analogies Test*) could account for the levels of correlation among these items. Interestingly enough these are the items which correlated highest with the dependent variable. Although familiarity with the subject aids the interviewer, this information could restrict the interviewer unconsciously toward acquiring little information more than what is already known from the Miller and the GPA. If the interview could be structured so that it probed areas such as values, preferences, and attitudes which tend not to be correlates of an academic success criteria, this may reduce the level of correlation between professors' ratings and the Miller and GPA and increase the multiple correlation and controlled variation in the dependent variable.

Earlier I suggested that the modern administrator needs to be able to assume many roles, be cognizant of converging forces, and be sensitive to many complex interwoven problems. Possibly then we should specifically measure the ability of the applicant to perceive the intricate interrelationships in a complex situation, such as might be represented in one's ability to fake the *Strong Vocational Interest Inventory*. Some evidence on this notion suggests that there are individuals who can fake the *Strong* and individuals who cannot; those who can tend to make significantly higher undergraduate GPA's ($p < .05$) than their counterparts who cannot (Barocas, 1969).

Probably the more fruitful procedure lies in the preselection interview rather than adding paper and pencil tests to the variables in the selection criteria. If a simulated situational test were structured into the interview where the applicant must produce observable behavior, this may provide an increasingly more significant source of predicting the unaccounted for variation in patterns of predecisional behavior of administrative interns.

In sum, with the policy of university administration to restrict enrollments, possibly this will allow us to seek new ways to concentrate on quality of output. This is not to say that quality of output is not the major thrust at the present, but is it possible to do justice both to quality and satisfy expanding

enrollments in a period of relatively limited resources? One notion is rather clear, however, that a failsafe way of increasing quality output is merely to increase quality input (selection) and hope that functional processes (training) at least do not have a negative effect.

Table I. Correlation Matrix, Multiple Correlation, and Regression Weights

VARIABLES	Undergrad GPA 1	Graduate GPA 2	Miller 3	Doppelt 4	Prof. Ratings 5	Pre-Dec. Behavior 6
1	1.000	0.237	0.418	-0.148	0.217	0.081
2		1.000	0.151	0.105	0.524	0.656
3			1.000	0.022	0.441	0.393
4				1.000	0.235	0.271
5					1.000	0.532
6						1.000

STEP NUMBER	VARIABLE ENTERED	MULTIPLE R	RSQ	INCREASE IN RSQ
1	2 Grad GPA	0.6556*	0.4299	0.4229
2	3 Miller	0.7202	0.5187	0.0889
3	1 Undergrad GPA	0.7511	0.5641	0.0458
4	4 Doppelt	0.7685	0.5906	0.0265
5	5 Prof. Ratings	0.7703	0.5934	0.0029

BETA WEIGHTS	1 -33.84789	3 1.24448	5 4.86004
	2 116.33969	4 0.80586	

$R_{0.23145}$ = 0.770** $R^2_{0.23145}$ = 0.5934 K^2 = 0.4066

*p < 01 **p < 001 S_d = 52.28 $S_{est.}$ = 36.97

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